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Citation for published version:

Tate, A 2017, "With advances in artificial intelligence (AI), could traditional project management skills become a thing of the past?", *Project*, vol. Spring.

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Publisher's PDF, also known as Version of record

Published In:

Project

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With advances in artificial intelligence (AI), could traditional project management skills become a thing of the past?

Project asks two experts for their opinion on this issue's big question

A former mentor once told me that, in 45 years in business, nothing much had changed – the only advance had been the kind of reporting made possible by earned value analysis. He used this technique from the early 1990s, well before it was fashionable or even widely known. His message was that the fundamentals of good project management remain the same, but we should embrace new tools as and when they come along.

With all the technological developments that surround us, the pace of change is much more acute than it was for him. At my firm, we embrace innovation and technology. New techniques and devices enable us to do a better job for clients. AI will simply be another tool in our belts, rather than something that fundamentally disrupts what we do.

Traditional project management skills – such as managing teams, clients and stakeholders, decision making, and managing the politics of the project – will remain at the heart of our work. Project

management requires the ability to answer, and influence, the core aspects of what is happening. What is it going to cost? When is it going to be ready? Are we getting value for money? It might be that AI could answer some of

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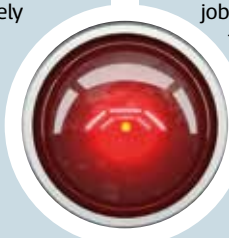
these questions, but let us look one step further.

In the introduction to APM's *Planning, Scheduling, Monitoring and Control*, we included a paragraph on the most fundamental of all project management skills: the application of common sense. We wanted to make the point that all of what we have written on the subject needs to be taken, in effect, with a pinch of salt – that a one-size solution cannot possibly fit all. How does one define common sense? And, more importantly, how can an AI be programmed to either learn or develop common sense?

Now consider planning, one of the hard skills of project management. Planning is an art based on experience, sector knowledge and technical skill. An allied but separate skill is scheduling, the science of describing a plan. AI could conceivably undertake the scheduling part of project management – but for a machine to truly plan would be a much bigger challenge.

Can AI achieve this level of sophistication? Possibly, in part. But, in terms of bringing everything together to fulfil a goal, the human element will remain fundamental.

PAUL KIDSTON is director of project controls at Costain and the lead author of *Planning, Scheduling, Monitoring and Control*, published by APM



AI is all around us. We see more deployments announced each day, and we see positive and negative comments about the prospects for AI to both augment what we do, and potentially take over people's jobs. Although many of the AI techniques that are now being put to productive use have been around for decades, we seem to have just reached the tipping point where computing systems, networks and online knowledge bases have sufficient power to use AI to assist us. In the past year, we have seen effective speech-driven personal assistants, adaptive machine learning-driven applications, capable game-playing programs, autonomous vehicles and more.

Project management, planning aids and task-achieving agents will form a new wave of deployed AI systems alongside large-scale machine learning and adaptive systems, semantic-web knowledge systems and the speech/voice interfaces seen today.

Some people see AI applications operating in isolation and taking over specific jobs or roles from people. But I see future AI systems more as cooperative agents working alongside people and augmenting their skills. AI planning, scheduling and constraint-based systems are in use across many industries. We will see more deployments as the platforms that can use these compute-intensive algorithms improve.

One example is the Optimum-AIV system for assembly, integration and testing of the Ariane spacecraft's payload bay. This system works alongside traditional project management tools to deal with the complex constraints and options available, especially to advise when fixes are needed in high-tempo situations or if tight deadlines apply.

The project management task lends itself to support from a particular type of AI called 'mixed-initiative systems', where the unique capabilities of people work alongside the particular strengths of AI systems, and each can contribute to improved and effective outcomes. A project manager's tasks relate to people and organisations, as well as dealing with the technicalities of the constraints and resources – and those roles will not disappear.

So, project managers will not be replaced by AI. But change is coming to many jobs. I expect that those of you reading this will be among those able to take advantage of the changes.

AUSTIN TATE is professor of knowledge-based systems at the University of Edinburgh and director at the Artificial Intelligence Applications Institute

